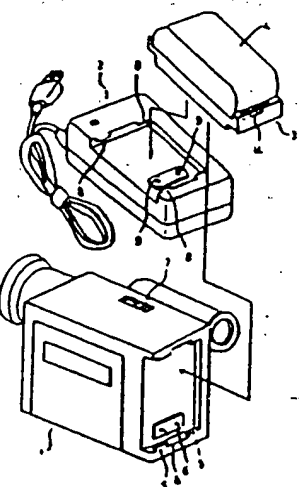
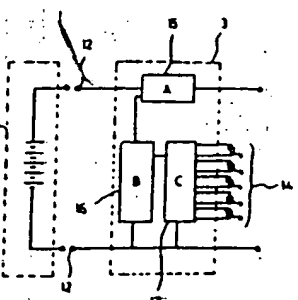


(54) CHARGING TYPE ELECTRIC APPARATUS

- (11) 3-155063 (A) (43) 3.7.1991 (19) JP
(21) Appl. No. 64-292801 (22) 10.11.1989
(71) SANYO ELECTRIC CO LTD (72) SHOICHI TOYA
(51) Int. Cl. H01M10/48, H01M10/42, H01M10/46

PURPOSE: To obtain a display function showing residual capacity simply even though the battery and the main body of an electric apparatus have no capacity display device by providing a capacity display device of a battery to an adapter.

CONSTITUTION: When a charger 2 is connected to an adapter 3, a charge current flows and a capacity display device 14 is lighted to show that a charging is started. When the charging is completed and a switch in the charger 2 is cut off, the all LEDs in the capacity display device 14 are lighted, and it is shown that the capacity in the battery is made 100%. When the adapter 3 is removed from the charger 2 in such a condition, and it is connected to a VCR 1 and a switch 7 is turned on, a discharge current flows. And as the time passes, the current flowing to a current detector 15 is integrated by an operation unit 16, and the resultant value is reduced from the battery capacity, the number of the lighting LEDs is reduced in order, and the residual capacity of the battery can be found. Consequently, the charging capacity display and the discharging capacity display can be made without providing display devices to the charger 2, the VCR 1, and the like, separately.



(54) BATTERY TEMPERATURE KEEPING DEVICE OF VEHICLE

- (11) 3-155064 (A) (43) 3.7.1991 (19) JP
(21) Appl. No. 64-295690 (22) 13.11.1989
(71) FUJI HEAVY IND LTD (72) TOSHIHIRO NAGANO(1)
(51) Int. Cl. H01M10/50, B60K1/04, B60L1/14

PURPOSE: To prevent a reduction of the battery power capacity due to low temperature by changing a change-over valve to lead a heated air to the battery when the temperature of the battery loaded on a vehicle is lower than a specific

